REMARKS

I. Introduction

In response to the Office Action dated September 28, 2004, claims 12-17 have been amended. Claims 1-31 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for purposes of patentability.

III. Office Action Non-Art Rejections

In paragraphs (1)-(2), the Office Action rejects claim(s) 12-17 under 35 U.S.C. § 112, as having insufficient antecedent basis, and claim 12 as being dependent upon the incorrect claim. The Applicants have amended claims 12-17 to recite the "subsystem" recited in claim 11, and has amended claim 12 to be dependent upon claim 11 as required. The Applicants submit that claims 12-17 now comply with 35 U.S.C. § 112.

IV. The Cited References and the Subject Invention

A. The Gordon Reference

U.S. Patent No. 6,754,905, issued June 22, 2004 to Gordon et al. disclose data structure and methods for providing an interactive program guide in which a video layer includes a plurality of video objects including title objects, each title object having associated with it a channel and at least one time slot, the video layer being formed in response to a received video stream; and a graphics layer comprising a plurality of graphics objects including title overlay objects, each of the title overlay objects selectively imparting at least a visual de-emphasis to a respective title object in the video layer, the visual de-emphasis being imparted to title objects not being associated with a desired time slot.

V. Office Action Prior Art Rejections

In paragraphs (3)-(4), the Office Action rejected claims 1-31 under 35 U.S.C. § 102(e) as anticipated by Gordon et al., U.S. Patent No. 6,754,905 B2 (Gordon). Applicants respectfully traverse this rejection.

With Respect to Claims 1, 11 and 22: Claim 1 recites:

> *In a broadcasting system having a first service network broadcasting a first signal having a first set of programs, a second service network broadcasting a second signal having a second set of programs, and a third service network broadcasting a third signal having a third set of programs, wherein the first signal, the second signal, and the third signal each include service channels uniquely identified by a service channel identifier, a method of providing a unified program guide to a receiver station, comprising the steps of:*
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> *merging at least a portion of a first program guide describing at least a portion of the first set of programs with at least a portion of a second program guide describing at least a portion of the second set of programs to produce a unified program guide describing at least a portion of a union of the first set of programs and the second set of programs;*
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> *mapping at least a portion of the unified program guide to a first service channel of the first signal and the second signal; and*
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> *mapping the portion of the unified program guide to a second service channel of the third signal, wherein the second service channel is logically offset from the first service channel.*

The Office Action argues that all of the foregoing features are disclosed in the Gordon reference:

> "Gordon discloses [repeating claim 1] , i.e. Gordon discloses an interactive program guide (Figs 1&2 and col. 4/line 24 to col. 5/line 65) within a broadcast system comprising different service networks such as a cable network, a DBS satellite network, NTSC television network (col. 1/lines 20-60) wherein sets of programs from different service network can be unified to a user at the user's receiver station based on portions of one set of programs whether a first, a second, or third set of programs and the second channel is offset from the first channel – meaning the time slots can be either offset or overlapping (col. 5/lines 14-37 & col. 21/line 59 to col. 22/line 50)."

The Applicants do not understand the rationale for this rejection.

First, the Gordon reference does not disclose a broadcasting system having first, second, and third service networks, each broadcasting a first, second, and third signal and a first, second, and third respective set of respective programs. The Office Action suggests that the different service networks are disclosed as follows:

> In several communications systems the data to be transmitted is compressed so that the available bandwidth is used more efficiently. For example, the Moving Pictures Experts Group (MPEG) has promulgated several standards relating to digital data delivery systems. The first, known as MPEG-1, refers to the ISO/IEC standards 11172 and is incorporated herein by reference. The second, known as MPEG-2, refers to the ISO/IEC standards 13818 and is incorporated herein by reference. A compressed digital video system is described in the Advanced Television Systems Committee (ATSC) digital television standard document A/53, and is incorporated herein by reference.
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> The above-referenced standards describe data processing and manipulation techniques that are well suited to the compression and delivery of video, audio and other information using fixed or variable length digital communications systems. In particular, the above-referenced standards, and other "MPEG-like" standards and techniques, compress, illustratively, video information using intra-frame coding techniques (such as run-length coding, Huffman coding and the DIVA 070 like) and inter-frame coding techniques (such as forward and backward predictive coding, motion compensation and the like). Specifically, in the case of video processing systems, MPEG and MPEG-like video processing systems are characterized by prediction-based compression encoding of video frames with or without intra- and/or inter-frame motion compensation encoding.
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> Over the past few years, television has seen a transformation in the variety of means by which its programming is distributed to consumers. Cable television systems are doubling or even tripling system bandwidth by migrating to hybrid fiber coaxial (HFC) cable as an information delivery medium. Many consumers have turned to direct broadcast satellite (DBS) systems to receive higher quality (with respect to NTSC) video imagery. Other video information delivery approaches using high bandwidth digital technologies, intelligent two way set top boxes and other methods are used by information providers to offer services that are differentiated from standard cable and over the air broadcast systems. (col. 1, lines 20-60)

The foregoing describes different means of information delivery and compression. Nothing discloses a broadcasting having first, second, and third service networks, each broadcasting a respective first, second, and third signal with respective first, second, and third programs.

Second, the Office Action indicates that the "programs from different service network[s] can be unified to a user at the user's receiver station. The Applicants' method provides the unified program guide *to* the receiver station ... it is not unified *at* the station.

Third, the Gordon reference does not disclose mapping at least a portion of a unified guide to a first service channel of the first signal *and* the second signal, nor mapping the *same* portion to a *second* service channel logically offset from the first service channel.

The Applicants do not understand the Office Action's statement regarding time slots that can be either offset or overlapping, as such features are not relevant to the features of claim 1. Further, the relied upon portion of the Gordon reference:

> The interactive program guide display 100 (i.e., the video layer provided by the head end) depicts a program offering of 10 channels within a 1.5 hour time interval. Since there are 24 hours in a day, 16 video streams are required to depict 24 hours of program offerings of 10 channels. These 16 video streams may be included within a single transport stream. Thus, a user desiring to view the next 11/2 hour time interval (e.g., 9:30-11:00) may activate a "scroll right" object (or move the joystick to the right when a program within program grid 150 occupies the final displayed time interval). Such activation will result in the controller of the STT noting that a new time interval is desired. The video stream corresponding to the new time interval will then be decoded and displayed. If the corresponding video stream is within the same transport stream (i.e., a new PID), then the stream will be immediately decoded and presented. If the corresponding video stream is within a different transport stream, then the different transport stream will be extracted from the broadcast stream and the appropriate video stream will be decoded and presented. If the different broadcast stream is within a different broadcast stream, then the different broadcast stream will be tuned, the different transport stream will be extracted from the different broadcast stream and the appropriate video stream will be decoded and presented. (col. 5, lines 14-37)
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> In a system comprising 80 channels, where channels are displayed in 8-channel groups having associated with them three half hour time slots, it is necessary to provide 10 video PIDs to carry the present-time channel/time/title information, one audio PID to carry the audio barker and/or a data PID (or other data transport method) to carry the program description data, overlay data and the like. To broadcast program information up to 24 hours in advance, it is necessary to provide 160 (10*24/1.5) video PIDS, along with one audio and, optionally, one or more data PIDs. The amount of time provided for in broadcast video PIDs for the given channel groups comprises the time depth of the program guide, while the number of channels available through the guide (compared to the number of channels in the system) provides the channel depth of the program guide.

> In a system providing only half of the available channels via broadcast video PIDs, the channel depth is said to be 50%. In a system providing 12 hours of time slot "look-ahead," the time depth is said to be 12 hours. In a system providing 16 hours of time slot "look-ahead" and 4 hours of time slot "look-back," the time depth is said to be +16/-4 hours.
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> These video streams for the IEPG display may be included as a PES within a single transport stream. Thus, a user desiring to view the next 11/2 hour time interval (e.g., 9:30-11:00) may activate a "scroll right" object (or move the joystick to the right when a program within program grid 150 occupies the final displayed time interval). Such activation will result in the controller of the STT noting that a new time interval is desired. The video stream corresponding to the new time interval will then be decoded and displayed. If the corresponding video stream is within the same transport stream (i.e., a new PID), then the stream will be immediately decoded and presented. If the corresponding video stream is within a different transport stream, then the different transport stream will be extracted from the broadcast stream and the appropriate video stream will be decoded and presented. If the corresponding transport stream is within a different broadcast stream, then the different broadcast stream will be tuned, the different transport stream will be extracted from the different broadcast stream, and the appropriate video stream will be decoded and presented.
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> Similarly, a user interaction resulting in a prior time interval or a different set of channels will result in the retrieval and presentation of an appropriate video stream. If the appropriate video stream is not normally part of the broadcast video streams, then a pointcast session is initiated. That is, the STT send a request to the head end via the back channel requesting a particular stream. The head end processes the request, retrieves the appropriate stream, incorporates the stream within a transport stream as a video PID (ideally the transport stream currently being tunes/selected by the STT) and informs the STT which PID should be demultiplexed, and from which transport stream it should be demultiplexed from. The STT then retrieves the appropriate video PID. In the case of the appropriate video PID being within a different transport stream, the STT must first demux the different transport stream (possibly even tuning a different QAM stream within the forward channel). (col. 21, line 59 through col. 22, line 50)

appear to refer to how the user selected objects in the program guide are used to present the media programs described in the program guide. This feature is not relevant to the features described in the Applicants' claims.

For all of the foregoing reasons, the Applicants respectfully traverse the rejection of claim 1.

Claim 11 recites:

A program guide subsystem, usable with a broadcasting system having a first service network broadcasting a first signal having a first set of programs, a second service network broadcasting a second signal having a second set of programs, a third service network broadcasting a third signal having a third set of programs, wherein the first signal, the second signal, and the third signal each include service channels uniquely identified by a service channel identifier, the program guide subsystem comprising:

a compiler, for merging at least a portion of a first program guide describing at least a portion of the first set of programs with at least a portion of a second program guide describing at least a portion of the second set of programs to produce a unified program guide describing at least a portion of a union of the first set of programs and the second set of programs; and

a controller for mapping at least a portion of the unified program guide to a first service channel of the first signal and a first service channel of the second signal, and for mapping at least a portion of the unified program guide to a second service channel of the third signal, wherein the second service channel is logically offset from the first service channel.

The Office Action rejected claim 11 for the same reason as claim 1. But as described above, the Gordon reference fails to disclose the features recited in claim 1. Accordingly, the Applicants respectfully traverse the rejection of claim 11 as well.

Claim 22 recites features analogous to those of claim 1, and is patentable for the same reasons.

With Respect to Claim 2, 12, and 23: Claim 2 recites:

The method of Claim 1, further comprising the step of:

associating a default transmitting network identifier with all of the viewer channels, the default transmitting network identifier having a value identifying a default service network transmitting the unified program guide.

The Office Action indicates that the foregoing is disclosed in the Gordon reference as follows:

The interactive program guide 100 depicted in FIG. 1 is formed using a single video stream having an associated audio stream and a corresponding graphic overlay. The program guide display 100 depicts an hour and a half time interval for each of ten channels. Thus, to depict an entire 24-hour time interval for ten channels, it is necessary

to provide 16 separate images or display screens of information. Each particular video screen may be associated with a packet ID (PID) value. A plurality of such video streams may be included within a single transport stream. (col. 8, lines 18-45)

Respectfully, all the foregoing discloses is that video screens can be associated with an ID. The notion of a default transmitting network identifier and a value identifying a default service network transmitting the unified program guide is not disclosed or suggested.

Claims 12 and 23 recite similar features and are patentable for the same reasons.

With Respect to Claims 3, 13, and 24: Claim 3 recites:

The method of Claim 2, further comprising the steps of:
receiving the unified program guide;
determining a receiver station configuration; and
presenting the unified program guide if the default transmitting network identifier corresponds to the receiving station configuration.

According to the Office Action, the feature receiving the unified program guide and presenting the unified program guide if the default transmitting network identifier corresponds to the receiving station configuration is disclosed in FIGs. 1, 10, 11, 12, 13, and 15. The Applicants respectfully disagree. The Applicants do not see where these figures disclose conditional presentation of a received unified program guide based on a default transmitting network identifier, and respectfully traverse this rejection.

Claims 13 and 24 recite similar features and are patentable for the same reasons as claim 3.

With Respect to Claim 4, 14, and 25: Claim 4 recites:

The method of Claim 3, further comprising the steps of:
associating a viewer channel with each of the programs in the portion of the union of the first set of programs, the second set of programs, and the third set of programs;
associating a transmitting network identifier with at least one viewer channel, the transmitting network identifier having a value identifying the service network transmitting the viewer channel; and

associating a channel identifier with at least one of the viewer channels, the channel identifier for controlling access to the program associated with the at least one viewer channel.

According to the Office Action, these features are described by FIGs. 7A-7E, and the following text:

The system stream 710 comprises, illustratively, a quadrature amplitude modulation (QAM) system stream conveyed by a forward channel within the DIVA VOD system. Specifically, the system stream 710 comprises a plurality of transport streams, including transport streams A-H (711-717). Each of the transport streams includes at least one of video, audio or data elementary streams or packetized elementary streams (PES). Each elementary stream within the system stream 710 has associated with it a unique packet identification (PID) number.

The transport stream 720 depicts an exemplary plurality of elementary streams associated with a first transport stream 711 (denoted as stream A) and a second transport stream 712 (denoted as stream B). Specifically, first transport stream 711 (i.e., stream A) comprises five elementary streams (721-725), each of which has associated with it a respective PID. The five elementary streams (721-725) of stream A are used to provide video, audio, and graphics/data information to a set top terminal such that the set top terminal is capable of producing, via a display device, an IEPG display such as described above with respect to FIGS. 1 and 6. The utilization of the transport stream 720 will now be discussed with respect to FIG. 7B.

In the exemplary embodiment of the invention, the system stream 710 comprises a constant bitrate stream having a bitrate of 3.37125 million bits per second (Mbps), each video PES has a bitrate of 1.05 Mbps, each audio PES has a bitrate of 192 Kbps (44.1 kHz audio) or 224 Kbps (44 kHz audio) while the remaining bandwidth is utilized by data streams, overhead and the like. It will be appreciated by those skilled in the art that the bitrate of any of these streams may be adapted to, e.g., provide minimum video and/or audio quality levels, provide maximum video and/or audio quality levels, to provide for a maximum number of video and/or audio elementary streams within a transport stream and other system design criteria. The exemplary bitrates are only provided to give a sense of the bandwidth utilization of a presently employed system utilizing the teachings of the invention. The actual bitrates will increase or decrease as the system is upgraded and the like.

FIGS. 7B through 7E depict respective tabular representations of exemplary utilizations of a single program transport stream providing program guide information and suitable for use in the multiple program transport stream of FIG. 7A. Specifically, each of the

disclosed data structures provides one or more video streams for carrying image guide and image region image information. The IEPG displays may be provided entirely in a single transport stream (FIG. 7E), in individual transport streams (FIG. 7D), in groups within transport streams (FIG. 7A), and in overlapping groups within transport streams (FIG. 7B). Each of the data structures described in FIGS. 7A-7D may be readily produced using the server-side or head end apparatus described above with respect to FIG. 4.

FIG. 7D depicts a tabular representation of an exemplary utilization of a pair of single program transport streams providing program guide information and suitable for use in the multiple program transport stream of FIG. 7A. Specifically, FIG. 7D depicts a tabular representation 700D of a single program data structure for carrying program guide information. That is, each of the single program transport streams (A-H) of the multi-program transport stream 710 comprises a single video PID, a single audio PID and, optionally, a data PID. Thus, a single program transport stream is required for each video PID. As previously noted, the information normally included within the data PID may be included within, e.g., a private data field or other location within the included video stream or audio stream.

Referring now to the tabular representation 700D of FIG. 7D, a first single program transport stream A comprises a video stream having associated with it a PID of 1 that contains IPG display screen image data related to channels 1-8; an audio stream having associated with it a PID of 2 that contains an audio track or audio barker for the video barker 120 of FIG. 1 or 620 of FIG. 6; and a data stream including overlay information, program or title description information or other information suitable for providing the IPG functionality. Similarly, a second a single program transport stream B comprises a video stream having associated with it a PID of 4 that contains IPG display screen image data related to channels 9-16; an audio stream having associated with it a PID of 5 that contains the same audio track or audio barker contained in the first single program transport stream A; and a data stream associated with channels 9-16 (including overlay information, program or title description information or other information suitable for providing the IPG functionality).

FIG. 7E depicts a tabular representation of an exemplary utilization of a single program transport stream providing program guide information and suitable for use in the multiple program transport stream of FIG. 7A. The data structure of FIG. 7E is denoted by the inventor as a "super-ganging" data structure. Specifically, FIG. 7E depicts a tabular representation 700E of a multiple program data structure for carrying all of the program guide information. That is, one of the single program transport streams (A-H) of the multi-program transport stream 710 is used to provide the necessary video PIDs to contain all of the IEPG displays to be provided in broadcast mode.

Referring now to the tabular representation 700E of FIG. 7E, a single program transport

stream A comprises N video streams, each of the N video streams being associated with a respective PID and containing IPG display screen image data related to a respective channel group (illustratively an eight channel group); an audio stream having associated with it a PID of N+1; and a data stream having associated with it a PID of N+2.

Advantageously, the "super-ganging" data structure provides for the most rapid changes between video PIDs, since each video PID is within the same transport stream.

FIG. 7B depicts a tabular representation of an exemplary utilization of a pair of single program transport streams providing program guide information and suitable for use in the multiple program transport stream of FIG. 7A. The data structure of FIG. 7B is denoted by the inventor as a "ganging" data structure. Specifically, FIG. 7B depicts a tabular representation 700B of a multiple program data structure wherein each transport stream comprises a respective plurality of program guide information. That is, two or more of the single program transport streams (A-H) of the multi-program transport stream 710 are used to provide the necessary video PIDs to contain all of the IEPG displays to be provided in broadcast mode.

Referring now to the tabular representation 700B of FIG. 7B, each of a first A and second B single program transport stream comprises three respective video streams, with each of the three video streams being associated with a respective PID and containing IPG display screen image data related to a respective channel group (illustratively an eight channel group); a respective audio stream having associated with it a PID of 4; and a respective data stream having associated with it a PID of 5.

Advantageously, the "ganging" data structure provides for rapid changes between video PIDs, where the video PID to be selected is within the same transport stream as the video PID presently selected. Moreover, the "ganging" data structure allows for the construction of relatively small transport streams, compared to the "super-ganging" structure described above with respect to FIG. 7E.

FIG. 7C depicts a tabular representation of an exemplary utilization of a number of single program transport streams providing program guide information and suitable for use in the multiple program transport stream of FIG. 7A. The data structure of FIG. 7C is denoted by the inventor as an "overlapping ganging" data structure. Specifically, FIG. 7C depicts a variation of the data structure described above with respect to FIG. 7B. In the data structure of FIG. 7C, each single program transport stream (A-H) comprises at least one video PID that contains an IPG display of a channel group that duplicates the contents of a video PID found in another single program transport stream. By contrast, the data structure of FIG. 7B does not duplicate the IPG display of a channel group. The "overlapping ganging" structure utilizes a multiple program data structure wherein each transport stream comprises a plurality of program guide information, including overlapping program guide information. That is, two or more of the single program

transport streams (A-H) of the multi-program transport stream 710 are used to provide the necessary video PIDs to contain all of the IEPG displays to be provided in broadcast mode.

Referring now to the tabular representation 700C of FIG. 7C, each of a first A, second B, and third C single program transport streams comprise three respective video streams, with each of the three video streams being associated with a respective PID and containing IPG 5 display screen image data related to a channel group (illustratively an eight channel group); a respective audio stream having associated with it a PID of 4; and a respective data stream having associated with it a PID of 5.

Referring to the second B single program transport stream, the first video PID contains channel group 9-16, the second video PID contains channel group 17-24, and the third video PID contains channel group 25-32. Note that the first video PID of the second B single program transport stream contains the same channel group as the third video PID of first A single program transport stream; and that the third video PID of the second B single program transport stream contains the same channel group as the first video PID of third C single program transport stream.

Advantageously, the "overlapping ganging" data structure provides for rapid changes between video PIDs, where the video PID to be selected is within the same transport stream as the video PID presently selected. Additionally, since the contents of the first and/or last video PIDs are included within two transport streams, the STT can utilize stream priming methods to select the second transport stream and transition the user to viewing the same IEPG display, but derived form a video stream within the second transport stream. In this manner, delays experienced by the user of the STT in changing from one transport stream to another are reduced, since the change is actually executed as a background process. Thus, the use of the "overlapping ganging" data structure and the stream priming technique provides most of the advantages of the "super-ganging" structure, but without the use of very large transport streams.

While the ganged 700B and overlapping 700C data structures are depicted as including only three video streams, each of these data structures may include more or fewer video streams. In one embodiment of the invention, each of the single program transport stream (A-H) comprises 10 video PIDs. In the case of the overlapping 700C data structure, the first video PID of each stream contains the same channel group as the last video PID of the preceding stream. Similarly, the last video PID of each stream contains the same channel group as the first video PID of the next stream. The terms "preceding" and "next" within this context indicate streams that carry contiguous EIPG display information, in either a channel-sense (e.g., adjoining channel groups) or a time slot sense (e.g., adjoining time slots).

An important aspect to the invention is the "stream priming" aspect. Stream priming is a

method of anticipating that a particular stream will be required and requesting that stream prior to the actual need for that stream. For example, where a user receiving a pointcast IEPG stream has traversed to within a threshold level of the upper or lower channel or time slots displayed, it is likely that the user will continue past the channel or time slot boundaries of the IEPG display. In this case, when the user reaches the threshold level, the STT sends a request for the appropriate next stream to the head end of the system. The head end processes the request and begins delivering the appropriate stream. In the case of the appropriate stream being delivered via the same transport stream currently being demultiplexed by the STT (a preferred embodiment), the STT simply selects the PID of the appropriate stream when the user exceeds the upper or lower channel or time slots displayed. In this manner, the latency inherent in requesting and receiving the appropriate stream is greatly reduced.

The first video stream (PID 1) comprises all the information necessary to produce a video layer for the IEPG display 600 of FIG. 6, including channel content objects 610-1 through 610-8 associated with channels 1-8 for a defined time period. The second video stream (PID 2) and third video stream (PID 3) differ from the first video stream (PID 1) in that the second video stream (PID 2) and third video stream (PID 3) comprise the information necessary to produce a video layer including channel content objects 610-1 through 610-8 associated with, respectively, channels 9-16 and channels 17-24.

The audio stream (PID 4) comprises the audio information necessary to produce the audio barker associated with the video barker 620 (e.g., the voice-over of a movie trailer displayed within the video barker 620 of the image region of the display.

The data/graphics stream (PID 5) comprises the title description information that is displayed as the program description object 650. That is, data/graphics stream (PID 5) comprises a textual description of each title provided by channels 1-8 for each of the displayed time slots (e.g., three half hour slots). The textual description of the titles is processed by the graphics processing elements of the STT such that the textual description of a presently highlighted or emphasized title of an indicated channel is presented to a viewer via the graphics layer of the IEPG display 600 of FIG. 6.

It is important to note that graphics and/or data information may be conveyed to a set top terminal using a data stream associated with a unique PID (as depicted here), as private data within the adaptation headers of the transports stream packets, or by other means (e.g., encoded within the video data using, e.g., watermarking techniques). Moreover, since the data stream is used to convey program identification data or other data that does not need to be provided in real time, such data may be used to build a local database of, e.g., favorite programming and the like. However, the favorite programming database does not comprise a program guide database. Rather, the favorite programming database comprises sufficient information to identify the favorite program or title, illustratively, the transport stream and video PID providing the appropriate channel group, an index

into the channel group (e.g., third channel from start), an index into the time slots (e.g., second time slot) and the like. There is no need to store the actual title of the program, only to determine which titles should be highlighted or emphasized in a favorite viewing mode.

Referring now to FIG. 7B, transport stream A comprises three ideo PES streams having respective PID values or 1, 2, and 3. Each ideo PES includes video information for providing the video layer of a program guide display, such as depicted above with respect to FIGS. 1 and 6. Each video PES stream has associated with it the channel guide information of a respective plurality of channels. Within the context of the program guide display of FIG. 1, each video PES includes channel guide information associated with a respective 10 channels arranged according to the grid display described above with respect to FIG. 1. Within the context of the program guide display of FIG. 6, each video PES includes channel guide information associated with a respective 8 channels arranged according to the mask and reveal display described above with respect to FIG. 6. (col. 23, line 33 to col. 27 line 58).

The Office Action argues that the foregoing "shows and describes detailed techniques on how portions or sessions of sets of programs from different networks as using different streams and different PIDs are gathered at the user's receiver or set top terminal and PIDs controlled." The Applicants do not understand the relevance of this statement to the features of claim 4. The foregoing discusses the notion of PIDs and how they might be used in a program guide, but the Applicants cannot ascertain where the features of claim 4 are disclosed. The Applicants therefore respectfully request that this rejection be further clarified, perhaps by indicating, with specificity, where the features of claim 4 can be found in the foregoing passage or anywhere else in the Gordon reference.

The analysis of claims 14 and 25 is analogous.

<u>With Respect to Claims 5, 15, and 26:</u> Claim 5 recites:

The method of Claim 4, further comprising the step of:
determining if the viewer channel should be presented in the unified program guide based upon a comparison between the transmitting network identifier and the receiving station configuration, and upon a comparison between the channel identifier and a conditional access value.

The Office Action suggests these features are found in the Gordon reference in FIGs 15A and 15B and in the following text:

> FIGS. 15A and 15B together comprise a user interaction method 1500 according to the invention. FIG. 15B also depicts a diagram representing an alignment between 15A and FIG. 15B. The method 1500 of FIG. 15 comprises a plurality of steps including some that perform substantially the same function as depicted above with respect to the user action method 500 of FIG. 5. Specifically, steps 504-522 of the user interaction method 500 of FIG. 5 operate in substantially the same way as steps 1502-1522 of the user interaction method 1500 of FIG. 15. Therefore, these steps will not be described in further detail except where such description indicates changes or additions to the previously described steps 502-522.
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> Referring now to step 1514 of FIG. 15 (which corresponds to step 514 of FIG. 5), if the query at step 1514 indicates that local interactivity only is requested by the user, then the method 1500 proceeds to step 1540, where a query is made as to the type of key pressed by the user. If the query at step 1540 indicates that a freeze key has been pressed by the user, then the method 1500 proceeds to step 1534, where the video frame presently stored in the frame store unit 262 is frozen. That is, the frame store unit 262 is not updated by subsequent video frames until such time as a freeze key or other key is pressed. The method 1500 then proceeds to step 1510, where the processor waits for user input.
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> If the query at step 1514 indicates that either an increment or decrement key has been pressed (e.g., a channel indication increment or decrement command) then the method proceeds to step 1544. If the query at step 1540 indicates that either a page up or page down key has been pressed, then the method 1500 proceeds to step 1542.
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> At step 1542, a query is made to determine if either a page up or page down key is, in fact, a page up key. If the query at step 1542 indicates that a page up key has been pressed, then the method 1500 proceeds to step 1532. If the query at step 1542 indicates that a page down key has been pressed, then the method 1500 proceeds to step 1526. As previously described with respect to FIG. 9A, a page down key pressed while the guide region is active indicates a desire to select the video stream including the program guide having a next group of channels, while a page up key pressed while the guide region is active indicates a desire to select the video stream including the program guide having a prior group of channels.
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> At step 1544, a query is made as to whether an increment key has been pressed. If the query at step 1544 is answered affirmatively, then the method 1500 proceeds to step 1546. If the query at step 1544 is answered negatively (i.e., a decrement key has been pressed), then the method 1500 proceeds to step 1548.

At step 1546, a query is made as to whether a last upper channel is presently being indicated. That is, a query is made as to whether the upper most channel of the program guide (i.e., channel content object 610-1) is presently indicated by channel indicators 641A and 641B. If the query at step 1546 is answered affirmatively, then the method 1500 proceeds to step 1532. Specifically, if the upper most channel content object 610-1 is presently indicated, then the satisfaction of the user increment key input requires the selection of the video stream including the next channel group (i.e., the channel group including a lower channel that is contiguous with the presently selected upper channel in a channel guide sense). If the query at step 1546 is answered negatively, then the method 1500 proceeds to step 1550.

At step 1550, a query is made as to whether an upper threshold level has been reached. As previously discussed with respect to path 830 of FIG. 8B, an upper threshold level is a level at which a request for a prior channel PID should be made if such a prior channel PID is unavailable. If the query at step 1550 is answered affirmatively, then the method 1500 proceeds to step 1552. If the query at step 1550 is answered negatively, then the method 1500 proceeds to step 1558.

At step 1552, a determination is made as to whether the prior channel group is available. An available channel group is a channel group within a video stream that is presently being broadcast or narrowcast or pointcast to one or more set top terminals. As previously noted, the set top terminal receives information associating each channel group with a particular video stream as identified by a unique PID. If the unique PID, or the stream associated with the unique PID, is not being broadcast, narrowcast, or pointcast, then it is appropriate at this time to request that the head end begin a pointcast session so that the prior channel group may be received by the set top terminal without undue delay (e.g., without the user experiencing latency due to the amount of time required to process and respond to a request for a video stream). The method 1500 then proceeds to step 1554.

At step 1554, a query is made as to whether the prior channel group is available. If the query at step 1554 is answered negatively, then the method 1500 proceeds to step 1556, where a request for the prior channel group is sent to the head end for processing. The method then proceeds to step 1558. If the query at step 1554 is answered affirmatively, then the method proceeds to 1558.

At step 1558, the channel indicator is moved up by one channel content object 610. That is, the channel content object immediately above the presently indicated channel content object is now indicated. The method 1500 then proceeds to step 1510 to wait for the next user input.

If the query at step 1544 is answered negatively, then the method 1500 then proceeds to 1548. At step 1548 a query is made as to whether the presently indicated channel is the

last lower channel. That is, a query is made as to whether the presently indicated channel is channel content object 610-8, per FIG. 6. If the query at step 1548 is answered affirmatively, then the method 1500 proceeds to step 1546. It is important to note that if the presently indicated channel is associated with channel content object 610-8, then a decrement command, as noted above with respect to FIG. 8B and path 832, requires the selection of the next channel PID to display the upper most channel of the next channel group (i.e., channel content object 610-1 of the next channel group). If the query at step 1548 is answered negatively, then the method 1500 precedes to step 1560.

At step 1560, a query is made as to whether a lower threshold has been reached. If the query at step 1560 is answered negatively, then the method 1500 proceeds to step 1568. If the query at step 1560 is answered affirmatively, then the method 1500 proceeds to step 1562.

At step 1562, a determination is made if the next channel group is available. This is, in a manner similar to that described above with respect to step 1552, a determination is made if a presently broadcast, narrowcast, or pointcast stream includes an IEPG guide display including information related to the next channel group. The method 1500 then proceeds to step 1564.

At step 1564, a query is made as to whether the next channel group is in fact available. If the query at step 1564 is answered affirmatively, then the method 1500 proceeds to step 1568. If the query at step 1564 is answered negatively, then the method 1500 proceeds to step 1566.

At step 1566, a request is made by the set top terminal to the head end for the head end to retrieve information associated with the next channel group (i.e., the guide and image portions of the IEPG display including the next channel group, or alternatively, a previously stored video screen including the appropriate information). As previously noted, by requesting such information at this point, the apparent latency of the system, as experienced by the user, is greatly reduced. The method 1500 then proceeds to step 1568.

At step 1568, channel indicators 641A and 641B are decremented or moved down by one channel content object 610. The method 1500 then proceeds to step 1510, where it waits for user input. (col. 35, line 28 through col. 37, line 42)

The Applicants do not understand where the transmitting network identifier, receiving station configuration, and conditional access value are disclosed in the foregoing. Perhaps a specific description of where these items might be found in the foregoing disclosure would be helpful, but without further explanation of this rejection, the Applications respectfully traverse.

Claims 15 and 26 recite similar features and are patentable for the same reasons.

<u>With Respect to Claims 6, 16, and 27:</u> Claim 6 recites:

> *The method of Claim 5, wherein the receiver station comprises a receiver, and the conditional access value is stored in a conditional access module releaseably coupleable to the receiver.*

According to the Office Action, Gordon inherently discloses this feature as follows:

> Controller 270 comprises a microprocessor 272, an input/output module 274, a memory module 276, an infrared (IR) receiver 275 and support circuitry 278. The microprocessor 272 cooperates with conventional support circuitry 278 such as power supplies, clock circuits, cache memory and the like as well as circuits that assist in executing the software routines. The input/output circuitry 274 forms an interface between the controller 270 and the tuner 210, the transport demultiplexer 230, the onscreen display unit 260, the back channel modulator 295, and the remote control unit 280. Although the controller 270 is depicted as a general-purpose computer that is programmed to perform specific interactive program electronic guide control function in accordance with the present invention, the invention can be implemented in hardware as an application specific integrated circuit (ASIC). As such, the process steps described herein are intended to be broadly interpreted as being equivalently performed by software, hardware, or a combination thereof. (col. 7, lines 15-32)

The Office Action argues that the foregoing inherently discloses that the conditional access value recited in claim 5 is stored in a conditional access module releasably coupleable to the receiver, since "ASIC is conventionally used in the system, which suggests a conditional access module or CAM can be used".

There are two problems with this rejection. First, it relies on a misapplication of the inherency doctrine. Inherency "may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1269(Fed. Cir. 1991). Instead, to establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Co.*, 948 F.2d at 1268.

In finding anticipation by inherency, the Office Action ignored the foregoing critical principles. The Office Action has not shown that the use of a CAM is necessarily present in the reference of record.

Secondly, even if the Gordon reference did disclose a conditional access module, it does not disclose that a conditional access value stored therein would be used to determine whether a viewer channel should be presented (as recited in claim 6 by virtue of its dependency on claim 5).

The Analysis of claims 16 and 27 is analogous.

With Regard to Claims 7, 18, and 28: Claim 7 recites:

> *In a broadcasting system having a first service network broadcasting a first signal having a first set of programs and a second service network broadcasting a second signal having a second set of programs, wherein the first signal and the second signal each include service channels uniquely identified by a service channel identifier, a method of receiving a unified program guide to a receiving station, comprising the steps of:*
>
> *receiving a unified program guide and a default transmitting network identifier at a receiving station on a first service channel, the unified program guide describing at least a portion of a union of the first set of programs and the second set of programs, and the default transmitting network identifier having a value identifying the service network transmitting the unified program guide;*
>
> *presenting the unified program guide to a subscriber according to the default transmitting network identifier.*

The Office Action rejected claim 7 using many of the same arguments that were applied against claim 1. However, as described above, Gordon does not disclose Gordon reference does not disclose a broadcasting system having first, second, and third service networks, each broadcasting a first, second, and third signal and a first, second, and third respective set of respective programs. Gordon likewise does not disclose the notion of a default transmitting network identifier, nor presenting the unified program guide to the subscriber according to this identifier. Accordingly, the Applicants respectfully traverse the rejection of claim 7.

Claims 18 and 28 recites features similar to those of claim 7 and are patentable for the same reasons.

With Respect to Claims 8-10, 19-21, and 29-31: These claims recite features that are discussed above, and are patentable for the same reasons. For example, claims 8, 19, and 29

recite features analogous to claim 3, claims 9, 20, and 30 recite features analogous to claim 4, and claims 10, 21, and 31 recite features analogous to those of claim 5.

VI. Dependent Claims

Dependent claims 2-6, 8-10, 12-17, 19-21, 23-27, and 29-31 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicants respectfully request that these claims be allowed as well.

VII. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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